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10/544,166	10/16/2006	Vladimir Nikolajevic	282823US8XPCT	7760

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EXAMINER
AKBAR, MUHAMMAD A

ART UNIT	PAPER NUMBER
2618	

NOTIFICATION DATE	DELIVERY MODE
09/28/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/544,166	NIKOLAJEVIC ET AL.	
	Examiner	Art Unit	
	Muhammad Akbar	2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 June 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *30-55* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *30-55* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Applicant's amendments filed 06/26/2007 have been entered. Claims 1-29 have been cancelled. Claims 30-55 have been added.

Response to Arguments

2. Applicant's arguments with respect to claim(s) 30-55 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. The factual inquiries set forth in Graham v. John Deere Co., 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claim(s) 30-55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Markhovsky et al (U.S. Pub. No. 2006/0012476 A1) and in view of Yamazaki (U.S. Pub. No. 2003/0236096 A1) and further in view of Harbin et al (U.S. Patent No. 5,701,583).

Re claim 30, Markhovsky discloses a wireless system (20 of fig.1) for determining the location of mobile terminal wherein Bluetooth (a short range wireless communication) technology can be combined (para[0062]) for communication system with a Master unit (21 o fig.2A) i.e. first terminal and a Slave unit (31 of fig.3A) i.e. mobile terminal which is adapted for transmitting and receiving an information carrying signal wave through transmitter (43 of fig.2) and receiver (45 of fig.2) of Master unit's (21) and transmitter(63 of fig.3) and receiver (65 of fig. 3) of Slave unit's (31); whereby at least the Master unit(21) or the slave unit(31) comprises processor unit (40 of fig.2

and 60 of fig.3) includes a digital signal processor (74 of fig.5) that convert the signal analog to digital by converter (80 of fig.5) and transmitter section (41 of fig.5) includes a digital to analog converter (86 of fig.5) and frequency converter (88 of fig.5) for transmitting the signal through antenna(47 of fig.2 and 67 of fig.3) and configured to determine the actual distance by distance measuring unit(48 of fig.2 and 68 of fig.3) via processor according to the direction of the location of master and slave unit terminal(see abstract, fig.1–4,5,7para[0142]-[0144]);

Markhovsky further discloses the position information (i.e. terminal point P1,P2,P3) is determined based on received signal strength indicator (119 of fig. 5) (RSSI) value from decoded carrying signal which is coupled to the distance measurement unit (see fig.7,8 and para[0011],[0139]);

But failed to disclose explicitly transmitting and / receiving information carrying signal wave with a directional characteristics. However, Yamazaki teaches mobile station controlling antenna directionality (same field of endeavor) wherein mobile terminal comprises antenna controller (102 of fig.2), plurality of antenna (101 of fig.2), a combiner, a reception (104 of fig.2) and transmission module (105 of fig.2); and antenna controller (102) has phase shifter that control the directionality of the phased array antenna which is executed by computing information based on the traveling direction angel (θ) (see fig.2,3,4 para [0035]-[0038][i.e. mobile terminal received/transmitted information carrying signal wave with directional characteristics).

But Yamazaki does not teach control means that adapted to control the half power beam width (HPBW) of the directional characteristics. However, Harbin teaches

wireless communication system having a scanned directional antenna (same field of endeavor) wherein base station (12 of fig.1B) includes a transmit antenna (15 of fig.1B) and receive antenna (14 of fig.1B) which are coupled to the transmit system and information transmitted to the remote station (16 of fig.1B) ;and base station included half power beam width (HPBW) for determining the control of direction of beam pattern by the controller(see col.4 lines 36-43).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify short range wireless communication system comprises master unit and slave unit wherein transmitting and receiving information signal wave; and master unit and slave unit includes a digital signal processing unit for converting the signal and measuring actual distance according to the position information of the master unit and slave unit (as taught by Markhovsky) by incorporating antenna controller that has phase shifter for controlling the signal traveling direction with the angle information (as taught by Yamazaki) for increasing signal strength and enhancing communication quality between the master and slave unit and further by including half power beam width in the azimuthal plane into the master and salve unit for controlling the directional pattern of the beam width (as taught by Harbin) to reduce power consumption by providing narrow beam width and high gain antenna pattern in the short range wireless communication system.

Re claims 31,32, Markhovsky teaches all the limitations in combination with Yamazaki with respect to claim 30 and Yamazaki further teaches direction is computed

with an angel (α) to a traveling direction (see fig.4), and azimuth angle (θ) is determined by an antenna control parameter (para [0034]-[0039]) but failed to discloses increases the Half Power Beam Width of the directional characteristics. However Harbin teaches a radio communication system comprises base station and remote station transmitting and receiving signals wherein base station includes half power beam width and controller control directional pattern of the antenna beam for increasing the Half Power Beam Width (see fig.2-3 and col.4 lines 34-43).

Re claim 33, as discussed above with respect to claim 30, Markhovsky further discloses a distance determination means determining the distance by distance measuring unit (48 of fig.2) between the master unit (21 of fig.1) i.e. first terminal and the slave unit (31 of fig.1) i.e. mobile terminal (see fig.2 and 3).

Re claim 34, as discussed above with respect to claim 33, Markhovsky further discloses that the distance measuring unit (48 of fig.2) uses voice communication (ultrasonic) distance measurement system (see para[0149]-[0151]).

Re claim 35, as discussed above with respect to claim 33, Markhovsky further discloses that the distance measuring unit (48 of fig.2) comprises an optical distance measurement system.

Re claim 36, as discussed above with respect to claim 33, Markhovsky further discloses that the distance measuring unit (48 of fig.2) with processor is adapted to determine the distance between the master unit (21) i.e. first terminal and the slave unit (31)mobile terminal based on a Received Signal Strength Indicator (RSSI) value (para[0139]).

Re claim 37, as discussed above with respect to claim 33, Markhovsky further discloses that the distance measuring unit (48 of fig.2) is located on the master unit(21) i.e. first terminal (see fig.2).

Re claim 38, as discussed above with respect to claim 30, Markhovsky further determining movement monitoring by virtual triangulation successive pattern technique wherein slave unit (31) is located within the range of master unit i.e. monitoring unit (21 of fig 23) and measure the distance to a slave unit (31) and direction location is measured by using cosine theorem(i.e. adjusting the directional characteristics) after adjusting the additional measurement(see abstract, fig.1–4,5,7,23 para[0228]-[0233]).

But failed to disclose explicitly transmitting and / receiving information carrying signal wave with a directional characteristics. However, Yamazaki teaches mobile station controlling antenna directionality (same field of endeavor) wherein mobile terminal comprises antenna controller (102 of ig.2), plurality of antenna (101 of fig.2), a combiner, a reception (104 of fig.2) and transmission module (105 of fig.2); and antenna controller (102) has a phase shifter that control the directionality of the phased array

antenna is executed by computing based on the traveling direction angel (θ) and control parameter (see fig.2,3,4 para [0035]-[0038][Mobile terminal received/transmitted information carrying signal wave with directional characteristics).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify short range wireless communication system comprises master unit and slave unit wherein transmitting and receiving information signal wave; and master unit and slave unit has a digital signal processing unit for converting the signal and measure movement direction by using virtual triangular successive pattern movement technique direction adjusted by cosine theorem (as taught by Markhovsky) by incorporating antenna controller that has phase shifter for controlling the signal traveling direction (as taught by Yamazaki) to increase reception signal strength and lowering the consumption of the load by rapid controlling the antenna directionality of the short range wireless communication system.

Re claim 39, as discussed above with respect to claim 38, Markhovsky further discloses the movement monitoring means is located on the slave unit (31) i.e. mobile terminal and/or on the monitoring unit(21) i.e. first terminal (see fig.23-33 and para[0229]).

Re claims 40,41,42, as discussed above with respect to claim 38, Markhovsky discloses all the limitations except the movement monitoring means comprises a sensor means for providing one or more electrical signals corresponding to one or more

physical quantities related to the movement of the mobile terminal relative to the first terminal; and the sensor means comprises an acceleration sensor for providing an electrical signal indicating an acceleration value associated with the movement of the terminal housing the sensor means; and the sensor means comprises a gyroscope sensor for providing an electrical signal indicating an orientation value associated with the movement of the terminal housing the sensor means.

However, Yamazaki teaches movement monitoring sensor (vehicle movement monitoring sensor) includes a speed sensor (110 of fig.2) i.e acceleration sensor that detects vehicles speed for providing more electrical signal; and gyroscope (111 of fig.2) that detects angel of traverse for providing an electrical signal indicating first value and position change by GPS location system(see fig.2 and para[0028],[0031])

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify short range wireless communication system comprises master unit and slave unit and measure movement direction by using virtual triangular successive pattern movement technique (as taught by Markhovsky) by incorporating speed sensor and gyroscope sensor for determining speed of the movement and angle for providing current location of the vehicles (as taught by Yamazaki) to obtain high quality communication by providing sensor that help to easy determine a position and location with angle of the moving devices and monitoring unit for a short range wireless communication system.

Re claim 43, as discussed above with respect to claim 38, Markhovsky further discloses the movement monitoring technique provides tracking data to a direction calculation by cosine theorem with the help of digital processing unit (control unit) for tracking data are based on a movement monitored of slave unit or target (para[0188]); and Yamazaki further teaches a vehicles unit i.e. slave unit wherein sensor (110 and 111) help to get quick determination of location and easy to calculate distance (fig.2 para[0028] and [0031])

Re claim 44,as discussed above with respect to claim 43, Markhovsky further discloses that the direction calculation means calculate the next successive movement by the control unit using cosine theorem i.e. slave unit send information to the monitoring unit to perform the distance measurement and the unit calculate values for the distances of salve unit (31,32,33,34 of fig.1) i.e. mobile terminal relative to the monitoring unit i.e. first terminal for the time of the next following exchange of information carrying signals (see para[0229]).

Re claim 45, as discussed above with respect to claim 43, Markhovsky further discloses the direction calculation performed by the control unit to provides a control signal to the direction adjustment by using cosine theorem which is based on the tracking ,findings in real both stationary and moving target and direction of movement to achieve optimal performance (para[0233]); and Yamazaki further teaches the antenna directionality relative to the base station is controlled on the antenna control parameter

and antenna controller (102 of fig.2) control the directional signal wave converter by phase shifter such that a reliable quality signal transmission is achieved(see fig.2 and para[005]).

Re claims 46,47, as discussed above with respect to claim 30, Markhovsky further discloses a short-range wireless mobile communication system characterized that the master unit (21) i.e. first terminal and slave unit (31) i.e. mobile terminal comprises controllable directional signal frequency (wave) converter (88 of fig.5 and 80 of fig.5)[DSP control unit controlled reception and transmission wave signal which includes directional information of the mater/slave unit]; and Yamazaki further teaches antenna controller (102 of fig.2) that convert omnidirectional signal wave by the phase shifter (see fig,2 and 4, para[0038]).

Re claim 48, as discussed above with respect to claim 30, Yamazaki further teaches the directional signal wave phase shifter (converter) is formed by a mechanical steerable directional signal wave converter by antenna controller (102) phase shifter (see fig.4).

Re claim 49, as discussed above with respect to claim 30, Markhovsky teaches all the limitation except directional signal wave converter is formed by an adaptive signal wave converter array. However, Yamazaki further teaches antenna control circuit (102 of fig.2) controlled directionality of the antenna (101) and this result is forming

(converting) a phased array antenna (see fig.2 and para[0022]).

Re claim 50, as discussed above with respect to claim 38, Markhovsky further teaches the signal wave converter on master unit i.e. first terminal and the signal wave converter on the slave unit i.e. mobile terminal are each adapted for transmitting and receiving information in a form of a radio frequency wave(see fig.1 and para[0064]).

Re claim 51 , as discussed above with respect to claim 50, Markhovsky further discloses that an antenna (47 of fig 2A and 67 of fig 3A) forms a signal wave converter by the signal processing unit and frequency converter (see fig.2A ,3A).

Re claim 52,53 as discussed above with respect to claim 30, Markhovsky further discloses distance measurement unit comprises DSP (74) comprises converter (86 and 88) for converting the wave signal and light emitting diodes (171,172,173) (i.e. electro – optical device) can be configured to indicate the status of the unit (see para[0146]); and mobile communication system comprises master unit (21 of fig.1) i.e. first terminal which is a stationary terminal (see fig.1 and para[0287]).

Re claim 54,55, Markhovsky discloses a wireless system (20 of fig.1) for determining the location of mobile terminal wherein Bluetooth (a short range wireless communication) technology can be combined (para[0062]) for communication system with a Master unit (21 o fig.2A) i.e. first terminal and a Slave unit (31 of fig.3A) i.e.

mobile terminal which is adapted for transmitting and receiving an information carrying signal wave comprising: distance measuring unit(48 of fig.2 and 68 of fig.3) measuring the actual distance of slave terminal with respect to the master terminal with the help of processor unit according to the direction of the location of master and slave unit terminal (see abstract, fig.1–4,5,7,para[0142]-[0144]); and the position information (i.e. terminal point P1,P2,P3) is determined based on received signal strength indicator (119 of fig. 5) (RSSI) value from decoded carrying signal which is coupled to the distance measurement unit (see fig.7,8 and para[0011],[0139]);

But Markhovsky failed to disclose explicitly transmitting and / receiving information carrying signal wave with a directional characteristics. However, Yamazaki teaches mobile station controlling antenna directionality (same field of endeavor) wherein mobile terminal comprises antenna controller (102 of ig.2), plurality of antenna (101 of fig.2), a combiner, a reception (104 of fig.2) and transmission module (105 of fig.2); and antenna controller (102) has phase shifter that control the directionality of the phased array antenna which is executed by computing information based on the traveling direction angel (θ) (see fig.2,3,4 para [0035]-[0038][i.e. mobile terminal received/transmitted information carrying signal wave with directional characteristics).

But Yamazaki does not teach control means that adapted to control the half power beam width (HPBW) of the directional characteristics. However, Harbin teaches wireless communication system having a scanned directional antenna (same field of endeavor) wherein base station (12 of fig.1B) includes a transmit antenna (15 of fig.1B) and receive antenna (14 of fig.1B) which are coupled to the transmit system and

information transmitted to the remote station (16 of fig.1B) ;and base station included half power beam width (HPBW) for determining the control of direction of beam pattern by the controller(see col.4 lines 36-43).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify short range wireless communication system comprises master unit and slave unit wherein transmitting and receiving information signal wave; and master unit and slave unit includes a digital signal processing unit for converting the signal and measuring actual distance according to the position information of the master unit and slave unit (as taught by Markhovsky) by incorporating antenna controller that has phase shifter for controlling the signal traveling direction with the angle information (as taught by Yamazaki) for increasing signal strength and enhancing communication quality between the master and slave unit and further by including half power beam width in the azimuthal plane into the master and salve unit for controlling the directional pattern of the beam width (as taught by Harbin) to reduce power consumption by providing narrow beam width and high gain antenna pattern in the short range wireless communication system.

Conclusion

7. The amendment necessitated the new ground(s) of rejection presented in this office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). A shortened statutory period for reply to this final action is set to expire

THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Muhammad Akbar whose telephone number is (571)-270-1218. The examiner can normally be reached on Monday- Thursday (7:30 A.M.-5:00P.M). If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lana Le can be reached on 571-272-7891. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MA

Lana N. Le

9-13-07

LANA LE
PRIMARY EXAMINER